

## Claims

1. A steel characterized in that it is a ferritic heat-resistant steel containing 15 mass% or less of Cr, in which at least the region up to 10  $\mu\text{m}$  defined by surface depth is made of a worked texture composed of extended ferritic grains or superfine texture  
5 composed of ferrites 3  $\mu\text{m}$  or less in grain diameter, and having a protective coating film on the surface.

2. A steel of Claim 1, characterized in that the shorter diameter of the extended ferritic grains thereof is 5  $\mu\text{m}$  or less.

3. A steel of Claim 1 or 2, characterized in that the shorter diameter of the  
10 extended ferritic grains is 3  $\mu\text{m}$  or less, or the grain diameter of the ferrites is 1  $\mu\text{m}$  or less.

4. A production method for a steel of one of claims 1 to 3, characterized by applying working in the temperature range of from 400 to 800°C to form a worked texture or superfine ferrite grain texture at least in the region up to 10  $\mu\text{m}$  defined by  
15 surface depth, and by applying pre-oxidation treatment to form a protective coating film.

5. A production method of claim 4, characterized in that the working degree on applying working is 0.7 or higher in true strain.

A production method of claim 4 or 5, characterized by that the pre-oxidation treatment is carried out by holding for 30 to 90 minutes in the temperature range of from 400 to  
20 800°C under the atmosphere.